DOCUMENT RESUME

ED 455 720 HE 034 175

AUTHOR	Kirst, Michael W.
TITLE	Overcoming the High School Senior Slump: New Education Policies. Perspectives in Public Policy: Connecting Higher Education and the Public Schools.
INSTITUTION	Institute for Educational Leadership, Washington, DC.; National Center for Public Policy and Higher Education, CA.
SPONS AGENCY	Pew Charitable Trusts, Philadelphia, PA.; Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO	K-16-R-01-01
PUB DATE	2001-05-00
NOTE	35p.; Prepared for the National Commission on the Senior Year in High School.
AVAILABLE FROM	Institute for Educational Leadership, 1001 Connecticut Ave., N.W., Suite 310, Washington, DC 20036 ($15). Tel: 202-822-8405.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Articulation (Education); *College Bound Students; College School Cooperation; *Educational Policy; *High School Seniors; High Schools; Higher Education; *Incentives; *Student Attitudes; Student Motivation

ABSTRACT

The slump experienced by many high school seniors stems in part from the failure of the K-12 school system and colleges and universities to provide incentives for high school seniors to work hard. Senior slump appears to be the rational response of students to some disjunctions between the K-12 and postsecondary systems, including a lack of assessment in grade 12, a college admissions calendar that provides little incentive for seniors to take demanding courses, a lack of coherence and sequencing between the K-12 system and colleges, and the emphasis on access and admission to college rather than preparation for completing college. Recommendations in this report are geared toward reclaiming the senior year as a time of serious work. These policy suggestions focus on: (1) strengthening the high school curriculum and linking it to the general education requirement of the first year of college; (2) recognizing various achievement levels on statewide K-12 assessments that meet college or university standards; (3) improving college admissions and placement priorities; and (4) assigning responsibilities for K-16 issues to a single entity in each state. An appendix discusses findings from Stanford University's Bridge Project. (Contains 1 table and 20 references.) (SLD)

ED 455 720

OVERCOMING THE HIGH SCHOOL SENIOR SLUMP:

New Education Policies

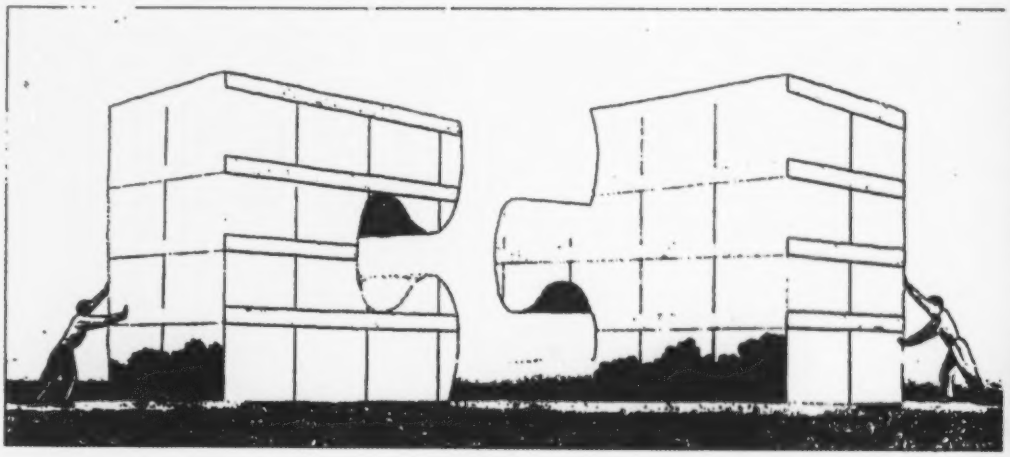
PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

H. Jack

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

By Michael W. Kirst



PERSPECTIVES IN PUBLIC POLICY:
CONNECTING HIGHER EDUCATION
AND THE PUBLIC SCHOOLS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

A Series Published by The Institute for Educational Leadership
and The National Center for Public Policy and Higher Education

Overcoming the High School Senior Slump:

New Education Policies

By Michael W. Kirst

May 2001

Perspectives in Public Policy:
Connecting Higher Education and the Public Schools

A Series Published by
The Institute for Educational Leadership and
The National Center for Public Policy and Higher Education

3

This paper was prepared for the National Commission on the Senior Year in High School, August 2000. The research was supported by The Pew Charitable Trusts and the U.S. Department of Education (OERI). The author is the Principal Investigator of the K–16 Bridge Project at Stanford University (www.stanford.edu/group/bridgeproject).

K–16 Report #01-01

© 2001 by The Institute for Educational Leadership and The National Center for Public Policy and Higher Education.

Contents

Foreword ..... *iv*
Executive Summary ..... *vi*
Introduction ..... *viii*

Systematic Incentives for Senior Slump 1
The Disjuncture Between K–12 and Higher Education 3
The Standards Movement and the K–16 Disjunction 5
High School Students Face a Babel of Assessments 8
Policies for Reclaiming the Senior Year 11
Conclusion 16
References 17
Appendix: Finding from the Bridge Project 18

About the Author 20
About the Series: Perspectives in Public Policy 21
The Institute for Educational Leadership 23
The National Center for Public Policy and Higher Education 23

Foreword

Educational policy in the United States is largely the responsibility of each of the 50 states. Within each state—and at the federal level as well—an additional, less overt, division exists, one that is based on the historical and pervasive assumption that the K–12 schools and the colleges and universities should be guided by policies exclusive to each sector. As a result of this premise, the public policy "tools" that influence one sector—funding, accountability and governance systems, for instance—have little in common with the policy tools that influence the other. Given this division, it is not surprising that the most serious questions about quality in American education have been directed primarily, if not exclusively, toward one side of the "educational divide"—the K–12 public schools.

In recent years, a number of policymakers and educators have questioned the premise that the policies guiding K–12 schools and higher education ought to be totally distinct. They consider this assumption to be anachronistic and an impediment to educational improvement at both levels. Several factors contribute to the erosion of the older premise—mainly, we suggest, the substantial portion of high school graduates (over 70 percent) who now go on to college, together with growing concerns about educational quality at all levels. Increasing attention to student and institutional performance have brought about the realization that neither perceived problems nor proposed solutions can be isolated or confined either to the schools or to the colleges alone. Both sectors have a direct interest in the policies that inform and guide teacher education, preparation for college, and college-level remediation. The old assumptions that emphasize separateness are starting to yield to a "K–16" perspective that embraces the overlapping influences and responsibilities of schools and colleges—a perspective that requires more coherent public policies that can improve student learning and preparation for college in K–12 schools, and that can enhance student success in college.

It is fairly easy to recognize the broad relationships among schools and colleges, but it is much more difficult to identify the real-world policies that can make a difference in academic performance.

K–16 is an attractive but elusive concept. It is fairly easy to recognize the broad relationships among schools and colleges, but it is much more difficult to identify the real-world policies that can make a difference in academic performance. The political and rhetorical boilerplate of K–16 is becoming commonplace—there is much talk of interdependence, building bridges across the sectors, and creating seamless transitions between them. Yet most policy remains within the well-trodden and distinct paths of each level, as does

funding, accountability and governance. In this report, Michael Kirst cuts through the rhetoric to reach practical ways to close the gap between these paths.

In *Overcoming the High School Senior Slump: New Education Policies*, Kirst focuses on an underused educational resource, the senior year of high school. He characterizes the senior slump as "the rational response of high school seniors" to signals from two- and four-year colleges, and to the confusing "babble" of standards and assessments that they face. He also links the pervasive disjuncture to the absence, in most states, of any forum that recognizes the joint responsibilities of high schools and colleges in addressing academic standards and assessments, college admissions and placement.

A major contribution of this report is that it moves beyond diagnosis to practical policy suggestions for strengthening the high school curriculum, improving statewide K–12 assessments, improving college admissions and placement policies, and assigning responsibilities for K–16 issues to a single entity in each state. The Institute for Educational Leadership and the National Center for Public Policy and Higher Education extend our appreciation to Michael Kirst for this significant contribution to a core educational and public policy issue.

A major contribution of this report is that it moves beyond diagnosis to practical policy suggestions.

Overcoming the High School Senior Slump is the most recent report in **Perspectives in Public Policy: Connecting Higher Education and the Public Schools.** Other publications in this series, available from the Institute for Educational Leadership (e-mail: iel@iel.org), include:

- *All One System: A Second Look*, by Harold L. Hodgkinson,
- *Higher Education and the Schools*, by P. Michael Timpane, and
- *Doing Comparatively Well: Why the Public Loves Higher Education and Criticizes K–12*, by John Immerwahr.

A related publication, *The Learning Connection: New Partnerships Between Schools and Colleges*, edited by Gene I. Maeroff, Patrick M. Callan and Michael D. Usdan, was published earlier this year by Teachers College Press, Columbia University.

Patrick M. Callan
President
The National Center for Public Policy and Higher Education

Michael D. Usdan
President
The Institute for Educational Leadership

Executive Summary

Policymakers and education leaders, in their efforts to improve public schools, have overlooked a key educational resource: the senior year of high school. Many high school seniors—at a critical point in their intellectual development—view their final months prior to graduation as an opportunity to take less demanding courses and enjoy nonacademic pursuits.

The economic and social consequences of this "senior slump" are considerable. The de-emphasis on academic work in the senior year is reflected in:

- the rising cost of remediation, as more college freshmen enroll in remedial writing, math, and science classes;
- the high drop-out rates among those college students who are unprepared for college-level work; and
- poor academic skills among those high school graduates who move into the workforce or the military.

Senior slump stems in large part from the failure of both the K–12 schools and the colleges and universities to provide incentives for high school seniors to work hard.

Senior slump stems in large part from the failure of both the K–12 schools and the colleges and universities to provide incentives for high school seniors to work hard. Indeed, senior slump appears to be the rational response of students to several disjunctures between K–12 and postsecondary education systems, including:

- K–12 assessments that evaluate performance in grades 2–10 and some cases grade 11, but not the 12th grade (only New York's state K–12 assessment includes the senior year);
- a college admissions calendar that provides few incentives for high school seniors to take rigorous academic courses;
- a lack of coherence and sequencing between the curriculum of the senior year and general education courses in college;
- a "babble" of contradictory assessments and standards—in which the content of K–12 achievement tests differs significantly from the content of college placement tests; and
- the universal emphasis—by high school counselors, college recruiters, college admissions and financial aid officers, students and their parents—on access and admission to college, with far less attention to the academic preparation needed to complete a postsecondary certificate or degree.

As a result of these disjunctures, many students face three conflicting standards: high school graduation, college admissions, and college placement.

The recommendations in this report are practical and specifically geared to reclaim the senior year as a time for serious academic work, yet they also reveal a pathway leading from a broader morass: how to increase coordination between the K–12 schools and colleges and universities. These policy suggestions focus on:

- strengthening the high school curriculum and linking it to the general education requirements of the first year of college;
- recognizing various achievement levels on statewide K–12 assessments that meet college or university standards;
- improving college admissions and placement priorities; and
- assigning responsibilities for K–16 issues to a single entity in each state.

Introduction

Senior slump is part of American high school culture. High school seniors, from the top of the class to the bottom, view much of senior year as a time they have "earned" for nonacademic pursuits, including fun, internships, and paid work. For the best-performing students, senior slump may begin in the fall, the day after they are accepted to college under early admissions. For other college-bound students, senior slump often begins soon after they have filed their college applications. For students not planning to attend college immediately after high school, senior slump may begin the moment they feel confident that they will graduate with their class.

In truth, senior slump seems uniquely American.

Senior slump seems so much a part of American high school culture that some may assume it is a universal phenomenon, that teenagers worldwide feel entitled to several months of light academic duty before heading off to college, work, or the armed services. In truth, senior slump seems uniquely American. In Britain, for example, students take their A levels and O levels at the end of their last year in secondary school, and these examinations are crucial for their future life chances. Because performance on these examinations determines admissions to universities and to departments within universities, British students spend their final year of secondary school in intense preparation.

Given the various proposals by educators and legislators that the American high school academic year be lengthened (by lengthening the school day or shortening summer vacation or adding classes on Saturday), it seems appropriate to explore a large expanse of underused time that is already on the school calendar. By curtailing senior slump, we could add valuable months to high school students' education at a critical point in their intellectual development. This paper examines the causes and consequences of senior slump and presents policy directives that can help American high schools reclaim the senior year.

Systemic Incentives for Senior Slump

The American educational system does little to discourage high school seniors from focusing on matters other than academic work. Rather than using the senior year to complete their secondary education and continue to prepare for postsecondary education, many seniors take less demanding courses and pay less attention to them.[1] Some students use this time for goofing off; others earn money for college or complete nonpaid internships.

For the 70% of students who go on to postsecondary education directly after high school, the primary academic tasks for senior year are, in their view, to graduate on time and to secure admission to college. The first of these tasks may be accomplished by taking the easiest courses that meet the school's graduation requirements. The second of these tasks usually does not require any effort after the first semester of senior year, since college admissions decisions do not rely on second-semester grades, and colleges rarely withdraw an admissions offer to a prospect whose grades drop sharply.

The college admissions calendar encourages college-bound students to work hard in their sophomore and junior years and provides no incentives for continuing to study hard or take challenging courses in their senior year.

Indeed, the college admissions calendar encourages college-bound students to work hard in their sophomore and junior years "since those grades are reviewed by admissions officers"and provides no incentives for continuing to study hard or take challenging courses in their senior year. It is not unusual for the highest-achieving students to take AP courses in their junior year in order to gain admission to a highly selective college and then drop challenging courses after receiving early admission in the fall of senior year.

The students' view is, of course, shortsighted. But it is hard for students to see beyond the twin goals of high school graduation and college admission. And in their minds, these goals are not only sufficient but discrete: They do not realize that meeting their high school graduation requirements does not mean that they are prepared for college (ACT, 2000). Nor do they think about using

[1]For instance, only 36% of entering college students report studying or doing homework six or more hours per week in their last year of high school. This marks the lowest figure since this question was first asked in 1987, when 47% reported studying six or more hours weekly (*The American Freshman*, 2000).

their senior year to prepare for the placement exams that may await them when they enroll in universities or community colleges.

One result is that many students who received good grades in high school spend part of their freshman year in college enrolled in remedial writing, math, and science classes. For example, 66% of the students admitted to the California State University campuses fail a placement test and must take a remedial course; at the more selective University of California campuses, almost a third of freshmen fail the writing exam.

Only when these students arrive for orientation or registration do they discover that they will not be allowed to take for-credit courses until they have passed the college's English and math placement exams.

Among those who fail college math placement exams are students who took math courses during their junior year in high school, but took no math their senior year. By the time they arrive on campus, they have forgotten their algebra, geometry, and trigonometry. Instead of moving on to college-level work, they must revisit topics they studied in high school. Remediation is a particularly acute problem for low-income students who proceed directly from high school to postsecondary education (ACT, 2000).

The colleges know this—they know how many of their freshmen fail their placement tests, how many are on academic probation, and how many drop out because they are not academically prepared for college-level work. But most colleges, like their applicants, have been more concerned about access to higher education—about admissions—than about academic preparation. For example, most community colleges have an open admissions policy, which fulfills their mandate to provide access. But community colleges send weak signals to high school students about the knowledge and skills they need to acquire in high school in order to succeed in college (Rosenbaum, 1998). Only when these students arrive for orientation or registration do they discover that they will not be allowed to take for-credit courses until they have passed the college's English and math placement exams.

The most selective colleges do little better on this score. Students who have taken AP courses in their junior year of high school are not encouraged to attempt challenging courses in their senior year. They are not provided with incentives to treat their senior year as a time to further develop and refine their academic skills.

The fault, of course, does not lie solely with higher education. Part of the problem is that the high schools view their curriculum more as a set of discrete courses than as a coherent program that culminates in the senior year. Seniors continue to accumulate the units needed for graduation with little guidance about the knowledge and skills they will need to succeed in their next endeavor, be it college or a vocation. Despite the cliché about viewing high

school graduation as a commencement, the high schools largely treat the completion of senior year as an end in and of itself.

In addition, the senior year has been left out of the accountability movement in the K–12 schools. Only New York's state K–12 assessment includes the senior year; other states stop by the 11th grade and most stop at the 10th grade level. The K–12 assessment movement has no strategy for accountability for the senior year.

From this perspective, senior slump appears to be the rational response of high school seniors to an education system in which no one claims the academic content of the senior year as a basis for further education. Neither the K–12 system nor the postsecondary system provides incentives for high school seniors to work hard. To understand this institutional disinterest in senior year, we must look at the almost total disjuncture between K–12 education and postsecondary education.

From this perspective, senior slump appears to be the rational response of high school seniors to an education system in which no one claims the academic content of the senior year as a basis for further education.

The Disjuncture Between K–12 and Higher Education

The origin of the disjuncture between lower and higher education in the United States stems, in part, from the laudable way the nation created mass education systems for both K–12 and higher education. In Europe, in contrast, the higher grades of secondary education were designed for an elite group who would be going on to universities, and European universities have long played a major role in determining the content of the secondary school curriculum and both the content and format of secondary school examinations. For example, professors at British universities like Oxford and Durham grade the A levels taken by students during their last year of secondary education, and these essay exams figure crucially in a student's chances for university admission.

Over time, the chasm between K–12 schools and postsecondary education in the United States has grown greater than that in many other industrialized nations (Clark, 1985), but at one time U.S. colleges and universities did play an important role in the high schools. In 1900, for example, the College Board set uniform standards for each academic subject and issued a syllabus to help students prepare for college entrance subject-matter examinations. (Prior to that, each college had its own entrance requirements and examinations.) Soon after, the University of California began to accredit high schools to make sure that their curriculums were adequate for university preparation.

In the postwar years, however, the notion of K–16 academic standards vanished. "Aptitude" tests like the SAT replaced subject-matter standards for college admission, and secondary schools added elective courses in nonacademic areas, including vocational education and life skills. Today, K–12 faculty and college faculty may belong to the same discipline-based professional organizations, but they rarely meet with one another. K–12 policymakers and higher education policymakers cross paths even less often. The only nationally aligned K–16 standards effort is Advanced Placement—a program that extends from universities, which dictate the course syllabus and exam. An exam score of 3 or higher out of 5 on an AP exam is one indicator of college preparation. But 33% of all AP students do not take the AP exam, which means that many AP students may not be benefiting much from AP's close link to postsecondary standards (Lichten, 2000).

With the exception of the AP program, there are no major efforts to provide curricular coherence and sequencing between the senior year and postsecondary education.

With the exception of the AP program, there are no major efforts to provide curricular coherence and sequencing between the senior year and postsecondary education, and the role of the senior year in high school as a forum for general education is rarely discussed. Nor has anyone proposed a conception of liberal education that relates the academic content of the secondary schools to the first two years of college. Instead, students face an "eclectic academic muddle in Grades 10–14" (Orrill, 2000) until they select a college major. In Ernest Boyer's metaphor, postsecondary general education is the "spare room" of the university, "the domain of no one in particular" whose many functions make it useless for any one purpose (Boyer and Levine, 1981). The functional "rooms," those inhabited by faculty, are the departmental majors.[2]

When attention is paid to general education, two contending theories predominate. One holds that the purpose of general education is to prepare students for a specialized major; the other, that the purpose of general education serves as an antidote to specialization, vocationalism, and majors. Clark (1993) hoped that somehow the specialized interests of the faculty could be arranged in interdisciplinary forms that would provide a framework for a coherent general education, but there is little evidence that this is happening.

---

[2] There are no recent assessments of the status of general education. Adelman (1992) analyzed college students' transcripts from the National Longitudinal Study, data from the early to mid-1970s, which proved to be a low point in general education requirements. He reported that students took very few courses in the fields comprised by general education. Less than one-third of college credits were from courses that focused on cultural knowledge, including Western and non-Western culture, ethnic, or gender studies. Among bachelor degree recipients, 26% did not earn a single college credit in history, 40% did not study any English or American literature, and 58% had no coursework in foreign languages.

In sum, the high school curriculum is unmoored from the freshman and sophomore college curriculum and from any continuous vision of liberal education. Policymakers for the secondary and postsecondary schools work in separate orbits that rarely interact, and the policy focus for K–16 has been more concerned with access to postsecondary education than with the academic preparation needed to complete a postsecondary degree or certificate. Access, rather than preparation, is also the theme of many of the professionals who mediate between the high schools and the colleges: high school counselors, college recruiters, and college admissions and financial aid officers.

The number and influence of mediating groups is, for Stocking (1985, p. 263), an indicator of the "amount of disorder and confusion that has grown through the years in the relationship between the school and the university in America." In addition to the mediating professionals employed by the high schools and the colleges, "A major role is assumed by the major private testing organizations, whose tests have become powerful tools for allocating students to different types of universities and colleges. And increasingly prominent is the mediating influence of federal government as it has attempted to increase equity in American education and now . . . seeks to emphasize excellence" (ibid.).

The Standards Movement and the K–16 Disjuncture

These reforms, however, have ignored the lack of coherence in content and assessment standards between K–12 and higher education.

In recent years, the standards movement has swept across the United States. Forty-six states have created K–12 academic content standards in most academic subjects, and all but Iowa and Nebraska have statewide K–12 student achievement tests. These state-directed efforts have two interrelated goals: clarifying what students must know and be able to do in the K–12 grades; and aligning standards, assessments, textbook selection, and accountability measures in those grades. These reforms, however, have ignored the lack of coherence in content and assessment standards between K–12 and higher education. Until educators address this issue, secondary schools and their students will have no clear sense of what knowledge and skills constitute an adequate preparation for higher education. The current scene is a Babel of standards rather than a coherent strategy.

Colleges and universities rely on the SAT I and ACT to provide some national assessment uniformity, but neither of these tests is well aligned with many recent reforms in K–12 standards. The relationship between K–12 standards and college placement tests is even more chaotic. In 1995, for

example, universities in the southeastern United States devised 125 combinations of 75 different placement tests, with scant regard to secondary school standards.

Tests at each level—K–12 achievement tests, standardized college entrance exams, and college placement assessments—use different formats, emphasize different content, and are given under different conditions, for example:

- High school assessments in Pennsylvania and Florida rely heavily on written work, but the SAT I, ACT, and some Florida college placement exams use multiple-choice tests to assess students' writing skills. Massachusetts's K–12 assessment also contains performance items that are dissimilar to the closed-end multiple-choice format of the SAT and ACT.
- California's new standards test includes math that is considerably more advanced and difficult than the SAT and ACT, but Texas's high school assessment (TAAS) includes less algebra and geometry than the SAT.
- Some state K–12 assessments permit students to use calculators, but many college placement exams do not.
- Texas has a statewide postsecondary placement test (TASP), but many Texas universities also use their own placement exams. High school students in Texas are either confused by or ignorant of college placement standards (Venezia, 2000).

In addition, many state assessments do not go beyond tenth grade and do not test every pupil (they use a matrix sample); such scores cannot be used for college admissions or placement. By contrast, Illinois is implementing a new state test to be given in grades 11 and 12 and plans to combine a state standards-based assessment with ACT.

Universities provide some good arguments to explain why they pay little attention to K–12 standards or assessments. First, the universities emphasize that they are not involved in the creation or refinement of the K–12 standards. Second, the universities observe that both politics and technical problems effect frequent changes in state K–12 standards. Third, they note that the K–12 assessments have not been evaluated to see how well they predict freshman grades (although such evaluations are not difficult to conduct).

Universities hope that the SAT and ACT will make adjustments to accommodate the new K–12 standards, and the universities feel more comfortable with these standardized tests, whose content and format they know and can influence. Most admissions officials see no need to implement an

alternative to the SAT or ACT taken in the junior year, despite any qualms they may have about the true value of these exams, because these tests have long provided them with an easy way to identify the students they want. Many universities are wary of being subjected to a postsecondary version of K–12 state-accountability systems and the political quagmire surrounding high-stakes testing. But in 2001, University of California President Richard Atkinson recommended that the university system drop the SAT I in favor of the course-based achievement tests of the SAT II. Also, Atkinson recommended using California's K–12 end-of-course tests if they predict freshman grades adequately. Atkinson cited the undesirable impact that the SAT I has upon high schools and students because SAT I sections are not aligned to the high school curriculum.

The disjunctures between K–12 and higher education will be hard to mend in the absence of a national institutional center and institutions in each state whose mission is K–16 alignment and reform. Currently, there are few opportunities for K–12 educators to discuss, much less resolve, questions about academic standards with college and university faculty or policymakers. Very few states have any policy mechanism for specific decisions concerning K–16 standards and assessment, and higher education coordinating bodies do not include K–16 standards alignment within their purview. The disciplinary and professional associations have the potential to serve as a locus for such discussion, but these are organized into separate K–12 and postsecondary units.

Currently, there are few opportunities for K–12 educators to discuss, much less resolve, questions about academic standards with college and university faculty or policymakers.

The governor's office might seem the logical place for states to align their fractured K–16 standards, but higher education leaders (especially those at the private universities) want to guard their political independence from gubernatorial and legislative interference in admissions criteria. Nor is it clear what can be done at the federal level, given that each state has its own K–12 standards and assessment system. When President Clinton spoke in support of voluntary national testing, he was silenced by protesters championing states' rights, local control of schools, and students' freedom and opportunity to learn.

A final caveat: Although the concept of a K–16 alignment of content and standards is promising, these efforts can have deleterious effects if not done properly. For example, K–16 alignment focused on low-level or inappropriate content would make the situation worse than it is now. Some of the K–12 state assessments are too basic to be used in evaluating students' readiness for postsecondary education.

High School Students Face a Babel of Assessments

High school students receive confusing messages about the academic knowledge and skills that they need to acquire in high school in order to succeed in college. Consider math proficiency as an example. In deciding how many years of math to take, high school students look at their high school graduation requirements and college admission requirements; the former reflect the content of any statewide grade 10–12 math assessments, and the latter entail mastering the content that appears in the math sections of the SAT I or the ACT. As a recent analysis shows (see Table 1), the content of statewide high school math assessment tests and the content of the math portions of the SAT I and ACT are fairly similar: they tend to emphasize basic algebra, geometry, probability and statistics, and numbers (number theory, arithmetic, combinatorics, and logic) and to ignore intermediate algebra, trigonometry, and precalculus.

Thus students prepare for and are admitted to college based on one set of skills, but are then given placement tests that cover different topics.

But the differences between all these tests and the college placement tests are enormous. College placement exams like Compass and Accuplacer, which are used by community colleges, put considerable emphasis on intermediate algebra and trigonometry. Thus students prepare for and are admitted to college based on one set of skills, but are then given placement tests that cover different topics.

Some K–12 state assessments, however, are rigorous and their content more closely resembles that of the college placement tests than that of the SAT I. The Massachusetts and Kentucky K–12 assessments include intermediate algebra and trigonometry. Then again, many state K–12 tests, including the California Stanford 9 and the Texas TAAS, stress data, probability, and statistics—topics that the college admissions and college placement tests largely ignore.

It is no wonder that high school seniors are confused. They are focused on high school graduation (state assessment tests) and college admission (SAT I)—not on college placement exams or undergraduate general studies or distribution requirements—and do not realize the importance of taking mathematics in their senior year as part of their preparation for college. Among high school students interviewed in Texas, for example (by researchers from Stanford's Bridge Project), those enrolled in honors and AP classes had the most awareness of college placement standards (see Appendix A; see also Education Trust, 1999).

The Bridge Project also examined the assessment of writing skills and found substantial differences in the format and content of tests administered to college-bound high school students. Many state 9–12 assessments are based on writing samples. Oregon and Pennsylvania, for example, require students to write an expository/analytical piece and a narrative/personal essay. New York, Massachusetts, and Kentucky combine reading comprehension and writing by asking students to write responses to questions about passages. In contrast, SAT I and ACT are multiple-choice tests that ask students to identify the error in a sentence or paragraph. SAT II does require students to write an essay, but the topics are personal and reflective; no expository or analytical writing is required, and the essay portion of the test lasts only 20 minutes. Even though most of the writing that students do in college involves analysis, reporting, argument, and persuasion, the college admissions process does not include any assessment of students' expository writing skills. College placement tests usually do require writing, but Accuplacer and Compass do not include expository or analytical essays.

Table 1. Distribution of Topics on Standardized Math Tests

	Percentage of questions devoted to:					
	Algebra 1	*Geometry*	*Data, probability, statistics*	*Number theory, arithmetic, combinatorics, logic*	*Algebra 2*	*Trigonometry/ precalculus*
Privately developed high school assessment tests						
TerraNova	14	29	23	21	0	0
Stanford 9 m/c	29	25	25	21	0	0
State high school assessment tests						
Kentucky (CATS)	9	33	17	18	20	0
Massachusetts (MCAS 10)	23	28	13	18	13	5
New York	29	26	9	26	9	3
Texas (TAAS)	12	23	3	53	0	0
College admissions exams						
SAT 1	47	23	3	23	3	0
ACT	25	27	5	18	12	8
Privately developed college placement tests						
Compass	14	23	0	19	25	15
Accuplacer al	25	0	0	0	75	0
Accuplacer cl	16	0	0	0	63	21

Source: Education Trust, 2000

Looking beyond mathematics and writing, the Bridge Project compiled lists of the various assessments used in six states. In California, for example, the following tests are administered:

State-Administered K–12 Assessments

- Stanford 9 augmented for California standards (every student is tested in grades 2–11)
- Golden State Exam (top third of high school students; for endorsed diploma)

BEST COPY AVAILABLE

- GED (high school equivalency exam)
- California High School Proficiency Exam (for early graduation from high school)
- State high school graduation test (about ninth grade level)
- *Under consideration:* English Language Learner Assessment

Public College and University Assessments

- SAT I (multiple choice)
- SAT II (subject matter; mostly multiple choice)
- ACT (multiple choice)
- Advanced Placement exams (subject matter; some multiple choice)
- Community college placement exams (vary by college/district)
- California State University placement exams (language arts and math)
- University of California placement exams (English and math)

An analysis of the content and format of these California assessments, conducted by the Rand Corporation, traces some of the misalignment between K–12 tests and college admissions and placement exams to "reforms that have taken hold at one level of the educational system, but not another . . . particularly . . . where new [state] tests have been developed to reflect state standards or frameworks that emphasize inquiry-based teaching and open-ended problem solving" (cited in Burr, Kirst, Fuller, 2000, p. 180).

Faced with a roster of tests that measure different sets of skills and fields of knowledge, high school seniors are not only confused about how to prepare for college but also uncertain about any possible relationship between the courses they take in high school and their academic future.

It is also worth noting that the value of standardized tests as a predictor of students' postsecondary academic achievement—measured by their completion of a certificate or degree program—is uncertain. Lanvin (2000), for example, compared the placement test performance of freshmen admitted to the City University of New York in 1988 with their graduation rates:

> As might be expected, students who passed all [three] of the tests were more likely to graduate (by 1996) than those who did not pass all of them. But what one may find surprising is that graduation rates for those who did not pass all of the tests are often substantial. Indeed, Asian students who failed one test were as likely to graduate as those

who passed all of the tests, and even among those who failed two, the graduation rate was quite comparable with those who passed all. Among those who failed all three tests, about a quarter had graduated from CUNY after eight years.

A final source of confusion for high school seniors lies in the complex, controversial changes in admissions policies in the wake of challenges to affirmative action. Some colleges and universities are placing less emphasis on standardized test scores and more emphasis on class rank. This may tempt some high school students to take easier courses in which they can earn higher grades. Some admissions formulas give extra points to students who complete AP courses; but other colleges are sensitive to the argument that AP courses are not uniformly available in all schools, and that students whose schools do not offer AP courses should not be penalized. Yet other admissions offices are developing holistic criteria that look beyond grades and test scores.

Students should understand that access to higher education—college admission—is only one aspect of their senior year, not the sole goal.

Policies for Reclaiming the Senior Year

Reclaiming the senior year of high school as a time for serious academic work will require efforts by a large cast of institutions and policymakers.

High school curriculum

For the 70% of high school students who will be moving directly into postsecondary education, senior year should be reconceptualized to improve academic preparation for college placement exams and college-level coursework, with emphasis on the skills and knowledge that are components of a general or liberal arts education. Students should understand that access to higher education—college admission—is only one aspect of their senior year, not the sole goal. For example, community colleges have open admissions but give nearly all students a placement exam before permitting them to enroll in for-credit courses. The Bridge Project at Stanford University estimates that over 50% of entering high school seniors do not meet placement exam standards at many community colleges, and should not be placed in credit-level courses.

High schools should redesign their senior-year courses so that they serve as

a gateway to general education requirements that students will encounter in their first year of college.

High schools should inform seniors of the importance of college placement exams and emphasize that senior-year math and writing courses will enhance students' placement scores and help them avoid having to take remedial courses in college.

High schools should review their course-credit policies for internships. Academic credit should be granted only for work experience that has a strong academic component.

High schools should expand successful dual-enrollment programs that enable seniors to take college-level courses. These programs should be open to all seniors, not just the highest achievers. Successful programs such as "Running Start" in Washington, and "Diploma Plus" in Massachusetts assume that most seniors can meet postsecondary standards and do not restrict dual enrollment to honors students.

High school accreditation by state governments and private groups (e.g., the North Central Association) should focus on the academic rigor of the senior year and on preparation for postsecondary education.

High schools need to consider an experiment that the school system in Rochester, New York, is planning to implement in 2002: a three-year high school diploma.

...

Statewide K–12 assessments

Statewide subject matter–based assessments for high school students should not be scored on a pass-fail basis; they should recognize various levels of competency and academic achievement. When these exams are graded pass-fail, the standard for passing is necessarily set low enough that almost all students will earn a passing score. But a test with such a low standard will not stimulate students to study hard and make their best effort to master the material. Not every student need take exams in every subject; for example, in many countries, students choose which subjects to be examined in and whether to take a basic, intermediate, or high-level exam in that subject.

College admissions policies

Colleges and high schools should cooperate in setting formulas for how the high schools are to calculate grade-point averages and class rankings. (Currently, high schools in some states can elect to include or exclude grades from nonacademic courses in their computations.) Colleges should accord appropriate weight for honors and AP courses, and performance in senior-year academic courses should be an important component in computing class rank.

Colleges should set explicit standards for senior-year performance in all courses and withdraw admissions offers if those standards are not met. Students should be required to take a specific number of academic credits during each semester of their senior year.

Colleges should set explicit standards for senior-year performance in all courses and withdraw admissions offers if those standards are not met.

Colleges should include information about freshman placement exams in the admissions information packet sent to applicants.

Colleges should require all applicants to take a test that requires a writing sample. The SAT I and ACT are multiple-choice tests; even the SAT II provides only 20 minutes for writing (the other 40 minutes test grammar and mechanics). Some statewide K–12 assessments have a writing sample that could be incorporated into the college admissions process.

Colleges that require math proficiency for graduation should include a senior-year math course in their admissions requirements. (Many states require only two years of math for high school graduation.)

As University of California President Atkinson recommends, colleges should request applicants' scores on statewide subject matter–based assessments and weigh these scores as a significant factor in admissions and freshman placement. States that have already developed appropriate subject matter external exams include Oregon, Pennsylvania, Michigan, North Carolina, Florida, New York, and Massachusetts. Unlike the SAT or ACT, these tests are curriculum-based by discipline and keyed to the content of specific course sequences (Bishop, 1996, 1997). These exams, therefore, measure a student's academic preparation and achievement relative to an external standard, not relative to other students in the classroom or the school, and they focus students' attention on their coursework, not on a standardized test–preparation workshop.

Colleges should deemphasize SAT I and substitute SAT II (or College Board

Pacesetters when it is developed); this would bring admissions standards closer to external discipline-based standards. The additional costs of SAT II should be borne by the public and not the student. Many SAT II exams need to be updated and improved; some have not been changed since they were first introduced.

Colleges should explore the feasibility of using student portfolios (authentic assessment) for admissions in lieu of current requirements and thereby create a new currency for higher education admission and placement. The Oregon PASS project has created a promising approach: Oregon PASS trains high school teachers to rate students' writing portfolios and provide scores to colleges and universities.

Colleges should widely publicize reports about remediation and the freshman performance of students from specific high schools.

Colleges should periodically analyze the messages they send to prospective students regarding academic preparation and admissions standards. In particular, colleges should examine the incentives that are offered to students of various abilities and socioeconomic status. For example, do financial aid policies disproportionately reward wealthy students who do well on external subject matter exams?

Colleges should widely publicize reports about remediation and the freshman performance of students from specific high schools. Such reports are routinely sent to high schools and central district offices, but they should also be publicized by the mass media and publicly reviewed by local school boards.

Freshman placement exams

Colleges should align their freshman placement exams with other state assessments and standards. Current placement exams should be reviewed for reliability, validity, and authenticity.

Colleges should inform high school students of the content, standards, and consequences of the placement exams.

Public colleges and universities should allow students to take placement exams in grades 11 and 12 and allow them to substitute statewide K–12 assessments for university-devised placement exams. In states that have different placement exams for each university or tier of postsecondary education, content differences should be analyzed to determine whether a common exam is feasible.

Colleges should widely publicize the freshman placement results for each high school.

Statewide K–16 policymaking

Many of the preceding recommendations will be easier to implement if each state assigns responsibility for K–16 policy to one commission or organization. In contrast, K–16 policymaking in California, as an example, is divided among at least a dozen groups.[3] To overcome this fragmentation, California created an Education Roundtable in 1981 that focuses on issues that span lower and higher education. Roundtable membership consists of the UC president, the CSU and California Community College chancellors, the superintendent of public instruction, the director of the California Postsecondary Education Commission, and the chairman of the Association of Independent California Colleges and Universities. But the Roundtable has made limited progress in aligning K–16 standards, and the elected State Superintendent cannot adequately represent all of K–12 education.

Many of the preceding recommendations will be easier to implement if each state assigns responsibility for K–16 policy to one commission or organization.

Particularly promising is the system of state and regional P–16 (preschool to grade 16) Councils in Georgia (Suggs, 2001, and Turner, 2000). The statewide Georgia P–16 Council focuses on four objectives:

1. The development of standards for what students should know and be able to do beginning in preschool and continuing through postsecondary levels.
2. The creation of a student database to monitor student progress through all levels of education.
3. The alignment of curriculums from preschool through postsecondary education.
4. The strengthening of teacher quality through the co-reform of schools and preparation programs for teachers, school leaders, and educational support personnel.

[3] These include the Regents of the University of California, the Trustees of California State University, the Board of Governors of the California Community Colleges, the State Board of Education, the California Postsecondary Education Commission, the California Department of Social Services, the California Economic Development Department, the Governor's Secretary of Education, the Superintendent of Public Instruction, the Assembly and State Legislative Committees, and the State Job Training Coordinating Council.

The Georgia P–16 Council is co-chaired, under a rotation system, by the heads of the Office of School Readiness (a voluntary preschool program), the State Department of Education, the Department of Technical and Adult Education, and the University System; the governor serves as the honorary chair. The 49 council members come from P–12 education, postsecondary education, youth advocate groups, the legislature, the corporate sector, and the community. The council does not have any authority in policy or law. It meets four times a year and sends its recommendations to the appropriate authorities and governing boards.

Early on, Georgia's P–16 Council understood that state-level efforts were necessary, but not sufficient to coordinate K–16 efforts. The council devised local partnerships to provide an infrastructure for grassroots support and new initiatives, such as supplemental programs in grades 7–12 for students in at-risk situations. In 1997 University System funds were used as seed money to form 15 local and regional P–16 councils. Each council received $10,000 and was charged with developing local plans to achieve the P–16 mission in their region. Membership in these local councils includes 29 of the state's 34 University System colleges and universities, 147 (of 180) school districts, 23 (of 34) technical institutes, 23 private schools, 80 businesses, 41 public agencies, and representatives from communities.

Conclusion

The first objective must involve placing the senior year as a priority on the public agenda.

All these policy recommendations for improving the senior year of high school will require leadership and grassroots support. It is unclear, however, what can be done to move the senior year into a prominent position on the public agenda. Perhaps the stimulus will come from rising public concern about the economic, social, and political costs of postsecondary remediation. Or perhaps the huge gap in postsecondary attainment between high-income and low-income students will prompt attention to academic preparation as an urgent issue of social equity as well as educational quality. But the first objective must involve placing the senior year as a priority on the public agenda.

More fundamental reform could be stimulated by reconceptualizing general education as a project spanning the last two years of high school and the first two years of college. That reassessment, however, will probably have to await the mobilization of a K–16 policy community.

References

ACT (American College Testing). 2000. *Plan National Profile Report*. Iowa City: ACT.

Adelman, Clifford. 1992. *Tourists in Our Own Land: Cultural Literacies and the College Curriculum*. Washington, D.C.: U.S. Department of Education.

———. 1999. *Inside the Tool Box*. Washington, D.C.: U.S. Department of Education.

The American Freshman: National Norms for Fall 2000. 2000. (Los Angeles: UCLA Higher Education Research Institute), as reported in *The Chronicle of Higher Education*, January 26, 2001, p. A49.

Bishop, John. 1996. "Signaling, Incentives, and School Organization in France, the Netherlands, Britain, and the United States." In Eric Hanushek and Dale Jorgenson (eds.), *Improving America's Schools*. Washington, D.C.: National Academy Press.

———. 1997. "The Effect of National Standard and Curriculum-Based Exams on Achievement." Paper presented at the American Economic Association Meeting, New Orleans.

Boyer, Ernest L., and Arthur Levine. 1981. *A Quest for Common Learning*. Princeton, N.J.: The Carnegie Foundation for the Advancement of Teaching.

Burr, Elizabeth, Michael Kirst, and Bruce Fuller (eds.). 2000. *Crucial Issues in California Education 2000*. Berkeley: Policy Analysis for California Education. [Alignment study conducted by Laura Hamilton at Rand Corporation.]

Clark, Burton. 1985. *The School and the University*. Berkeley: University of California Press.

———. 1993. *The Problem of Complexity in Modern Higher Education*. Cambridge: Cambridge University Press.

Education Trust. 1999. *Thinking K–16*. Washington, D.C.: Education Trust.

———. 2000. *Thinking K–16*. Washington, D.C.: Education Trust.

Lavin, David E. 2000. "Policy Change and Access to Two and Four Year Colleges." *American Behavioral Scientist* 3(7): 1155.

Lichten, William. 2000. "Whither Advanced Placement?" *Education Policy Archives* 8(29): 24 (on-line journal).

Orrill, Robert. 2000. "Grades 11–14: The Heartland or Wasteland of American Education." Unpublished paper, Woodrow Wilson Institute, Washington, D.C.

Rosenbaum, James. 1998. *Unrealistic Plans and Misdirected Efforts: Are Community Colleges Getting the Right Message to High School Students?* New York: Community College Research Center, Teachers College, Columbia University.

Stocking, Carol. 1985. "The United States." In *The School and the University*. Berkeley: University of California Press.

Suggs, Ernie. 2001. "Georgia's P–16 Initiative." In Gene Maeroff, Patrick Callan and Michael Usdan (eds.), *The Learning Connection*, pp. 78–86. New York: Teachers College.

Turner, Caroline S. 2000. *Strengthening P–16 Transitions: The Georgia Case*. Palo Alto, CA: Bridge Project, Stanford School of Education. www.stanford.edu/group/bridgeproject.

Venezia, Andrea. 2000. *Texas Case Study: Bridge Project Report*. Palo Alto, CA: Bridge Project, Stanford School of Education. www.stanford.edu/group/bridgeproject.

APPENDIX

Findings from the Bridge Project

The Bridge Project at Stanford has been studying K–16 policy issues in six states—California, Georgia, Illinois, Maryland, Oregon, and Texas—with a focus on admissions and placement. Bridge Project researchers are conducting field research in high schools, community colleges, and universities in these six states in order to understand how stakeholders comprehend and implement K–16 policies and procedures. Among the project's initial findings:

- Many students and K–12 educators are unaware of current undergraduate admissions policies in institutions of higher education. In Texas, for example, many counselors learn of changes in college admissions policies from newspapers or from their students.
- Many students and K–12 educators are unaware of the content and requirements of college placement tests.
- Differences exist between honors and non-honors students and teachers with respect to their understanding of college admissions policies and procedures. (Since the curricular tracks are highly segregated, with students of color overrepresented in non-honors tracks and white students overrepresented in honors courses, this finding has implications for equity.)
- At many high schools, there are no counselors who focus only on college counseling. Counselors are often overwhelmed with scheduling, student crises, and other pressing issues. Students often do not view their counselors as knowledgeable purveyors of college admissions information.
- High school administrators rarely use the feedback reports that universities provide (for selected high schools) concerning the freshman grades or remediation rates of their students.
- Many K–12 stakeholders view public university admission requirements as changing and confusing. Many counselors do not have current information on undergraduate admissions policies for public institutions of higher education in their state.
- Many higher education admissions and placement staff are unaware of specific K–12 standards reforms in their region.

Bridge Project researchers have used their research findings to draft policy questions:

- If your state has K–12 assessment tests, do those tests measure the same knowledge and skills that your state's public universities require for admission and for success on placement exams?
- Does your state have a statewide college placement examination or do institutions create their own placement exams? How do any such exams relate to each other and to the content of your state's K–12 assessments? If your state does not have a statewide college placement exam, how does your state assess its needs regarding student remediation?
- Do you have a statewide accountability system? Does it hold high schools accountable for offering college preparatory work, including Advanced Placement courses? Does it hold higher education institutions accountable for graduating their students?
- Can your state K–12 and higher education agencies link their databases in order to assess needs throughout the K–16 continuum? Can policymakers and researchers tell whether there are inequalities in terms of which students enter and graduate from college? Can they address issues of college preparation by tracking student success in higher education by district or by school?
- Do your universities have outreach programs that connect them to local schools and districts? Are these outreach programs coordinated with national, state, and nonprofit outreach programs?
- Are there articulation agreements between your state's public universities, community colleges, and high schools?
- Do your high schools have a sufficient number of counselors whose main role is to advise students about college options? Do all students have early, repeated access to college preparation information?
- Is there an institutional center or mechanism that allows K–12 and higher education stakeholders to work together on policy issues and implementation?

Source: www.stanford.edu/group/bridgeproject/

About the Author

Michael Kirst is professor of education at Stanford University and former president of the California State Board of Education. He is a senior researcher for the Consortium for Policy Research in Education (CPRE). His current research, in conjunction with the National Center for Postsecondary Improvement, focuses on academic preparation needed to succeed at community college.

Perspectives in Public Policy: Connecting Higher Education and the Public Schools

This publication series, "Perspectives in Public Policy: Connecting Higher Education and the Public Schools," seeks to promote public and educational policies designed to strengthen linkages between higher education and the schools. Reports in the series are addressed to policymakers, business and civic leaders, and educators. The series is co-sponsored by the National Center for Public Policy and Higher Education, and the Institute for Educational Leadership.

Ordering Information

This publication is available for $15.00 per copy. Orders of 10 to 24 copies are $12.00 per copy, and orders of 25 copies or more are $9.00 per copy. Prepaid orders are not charged for postage and handling. Billed orders are charged $2.00 for the first publication, and $1.00 for each additional publication ordered, up to a total of $5.00 for postage and handling.

To order publications from this series, please e-mail, fax or mail your request to the Institute for Educational Leadership. Please refer to the publication title and number when ordering.

The Institute for Educational Leadership
1001 Connecticut Avenue, NW, Suite 310, Washington, D.C. 20036
Telephone: 202-822-8405 • Fax: 202-872-4050 • E-mail: iel@iel.org

Reports Published in this Series

Overcoming the High School Senior Slump: New Education Policies, by Michael W. Kirst (May 2001, K–16 Report #01-01). Examines the causes and consequences of high school "senior slump" and presents policy directives that can help American high schools reclaim the academic rigor of the senior year.

Doing Comparatively Well: Why the Public Loves Higher Education and Criticizes K–12, by John Immerwahr (October 1999, K–16 Report #99-03). The

author explores public attitudes about K–12 and higher education, and identifies trends that suggest that higher education's "honeymoon" with the public may be waning. The report is based on a wide range of public opinion surveys and focus groups conducted by Public Agenda during the past five years.

Higher Education and the Schools, by P. Michael Timpane (July 1999, K–16 Report #99-02). This report explores the implications of school reform issues for the future of higher education.

All One System: A Second Look, by Harold L. Hodgkinson (June 1999, K–16 Report #99-01). This update to *All One System* clarifies recent trends, current impasses, and areas of immediate priority regarding the long-neglected relationships between higher education and the public schools.

The Institute for Educational Leadership

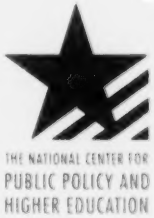
The Institute for Educational Leadership (IEL)—a nonprofit, nonpartisan organization based in Washington, D.C.—has worked to achieve better results for children and youth. At the heart of our effectiveness is our unique ability to bring people together to identify and resolve issues across policy, program and sector boundaries. As a natural outgrowth of our work, we have created and continue to nurture diverse networks across the country.

Today, IEL is working to help individuals and institutions increase their capacity to work *together*. We are building and supporting a cadre of diverse leaders, strengthening the capacity of education and related systems, and informing the development and implementation of policies. Our efforts are focused through five programs of work—*Developing Leaders; Strengthening School-Family-Community Connections; Governing; Connecting and Improving Systems that Serve Children and Youth; Improving Preparation for Work.*

Please visit our web site at www.iel.org to learn more about IEL's programs and services.

1001 Connecticut Avenue, NW, Suite 310, Washington, D.C. 20036
Telephone: 202-822-8405 • Fax: 202-872-4050
E-mail: iel@iel.org • Web site: **www.iel.org**

The National Center for Public Policy and Higher Education



The National Center for Public Policy and Higher Education promotes public policies that enhance Americans' opportunities to pursue and achieve high-quality education and training beyond high school. As an independent, nonprofit, nonpartisan organization, the National Center prepares action-oriented analyses of pressing policy issues facing the states and the nation regarding opportunity and achievement in higher education—including two- and four-year, public and private, for-profit and nonprofit institutions. The National Center communicates performance results and key findings to the public, to civic, business and higher education leaders, and to state and federal leaders who are poised to improve higher education policy. The National Center is not affiliated with any institution of higher education, with any political party, or with any government agency; it receives continuing, core

financial support from a consortium of national foundations that includes The Pew Charitable Trusts and The Ford Foundation.

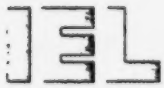
The National Center publishes:

- ★ Reports and analyses commissioned by the National Center,
- ★ Reports and analyses written by National Center staff,
- ★ National Center Policy Reports that are approved for release by the National Center's Board of Directors, and
- ★ *CrossTalk*, a quarterly publication.

Information about National Center publications not in the "Perspectives in Public Policy" series can be found at the National Center's web site: www.highereducation.org.

San Jose Office: 152 North Third Street, Suite 705, San Jose, California 95112
Telephone: 408-271-2699 • Fax: 408-271-2697
E-mail: center@highereducation.org • Web site: **www.highereducation.org**

Washington Office: 1001 Connecticut Avenue, NW, Suite 310,
Washington, D.C. 20036
Telephone: 202-822-6720 • Fax: 202-822-6730



Institute for Educational Leadership

1001 Connecticut Avenue, NW, Suite 310, Washington, D.C. 20036
Telephone: 202-822-8405 • Fax: 202-872-4050
Email: iel@iel.org • Web site: http://www.iel.org

National Center for Public Policy and Higher Education

San Jose Office: 152 North Third Street, Suite 705, San Jose, California 95112
Telephone: 408-271-2699 • Fax: 408-271-2697

Washington Office: 1001 Connecticut Avenue, NW, Suite 310, Washington, D.C. 20036
Telephone: 202-822-6720 • Fax: 202-822-6730

Email: center@highereducation.org • Web site: http://www.highereducation.org